



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION

November 19, 2014

Ms. Phyllis Kohel
Milford School District
906 Lakeview Avenue
Milford, DE 19963

RE: PLUS review 2014-10-01, Milford High School Site B

Dear Ms. Kohel,

Thank you for meeting with State agency planners on October 22, 2014 to discuss the proposed plans for the Milford High School site. According to the information received, you are seeking review of a site plan for a proposed site on 192 acres in Milford for a new Milford High School building.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. **The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as the City of Milford is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the City.**

Strategies for State Policies and Spending

- This project is located in Investment Level 1 according to the *Strategies for State Policies and Spending*. This site is also located in the City of Milford. Investment Level 1 reflects areas that are already developed in an urban or suburban fashion, where infrastructure is existing or readily available, and where future redevelopment or infill projects are expected and encouraged by State policy.

Code Requirements/Agency Permitting Requirements

State Historic Preservation Office – Contact Terrence Burns 736-7404

- There is no known archaeological site or National Register-listed property on this parcel. However, according to the Pomeroy and Beers Atlas of 1868 (19th-century historic map), it appears that there two dwellings on this parcel that were associated with a C. I. Gilbert and

122 Martin Luther King Jr. Blvd. South – Haslet Armory · Third Floor · Dover, DE 19901
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Wisihikon. There may be archaeological resources associated with those dwellings. With this in mind, the developer should be aware of the Unmarked Human Burials and Human Skeletal Remains Law, which is in Title 7, Chapter 54, of the Delaware Code.

Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, and sometimes near or within the boundary of an historic farm site. Even a marked cemetery can frequently have unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware's Unmarked Human Burials and Human Skeletal Remains Law (Delaware Code Title 7, Chapter 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. The Division of Historical & Cultural Affairs recommends that owners and/or developers have a qualified archaeological consultant investigate their project area, to the full extent, to see if there is any unmarked cemetery, graves, or burial sites. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to know more information pertaining to unmarked human remains or cemeteries, please check the following websites for additional information:

www.history.delaware.gov/preservation/umhr.shtml and
www.history.delaware.gov/preservation/cemeteries.shtml.

Prior to any demolition or ground-disturbing activities, the developer may want to hire an archaeological consultant to examine the parcel for any potential archaeological site (historic or pre-historic), historic cemetery or unmarked human remains.

- If there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's effects on historic properties. Any preconstruction activities without adherence to these stipulations may jeopardize the issuance of any permit or funds. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role, please review the Advisory Council's website at www.achp.gov.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Per Section 2.3.1 of the Standards and Regulations for Subdivision Streets and State Highway Access, Traffic Impact Studies (TIS) are warranted for developments generating more than 400 vehicle trip ends per day or 50 vehicle trip ends per hour. However, Section 2.3.2 provides that for developments generating less than 2,000 vehicle trip ends per day and less than 200 vehicle trip ends per hour, DelDOT may accept an Area Wide Study Fee of \$10 per daily trip in lieu of a TIS.

DelDOT estimates that a 1,300 student high school would generate 2,138 vehicle trip ends per typical weekday and 559 vehicle trip ends per hour during the morning highway peak hour of that day. Therefore, a TIS would be warranted and payment of the Area Wide Study Fee is not an option.

DelDOT recognizes that the School District may not be ready to commit to the expense of a TIS for this site but the primary purpose of a TIS is to identify traffic problems that either exist near a proposed development or would be caused by that development, and remedies for those problems. Therefore it could be useful to the School District to obtain a scope of work for a TIS now. Doing so, would show them what locations a TIS for this site would need to address and therefore the possible locations that DelDOT might require them to improve. To obtain a scope, the applicant may have their engineer contact Mr. Troy Brestel of this office. Mr. Brestel may be reached at (302) 760-2167.

In 2005, DelDOT reviewed a TIS for the development of Simpson Crossing: 1,300 dwellings and 30,000 square feet of retail space on the subject land. A copy of DelDOT recommendations to the City is attached as a matter of information, but the District should be aware that DelDOT regulations regarding TIS have changed and that a TIS done now may have to address intersections that the previous TIS did not.

- The site entrances must be designed in accordance with DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access. A copy of the Standards and Regulations is available at http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/Subdivision_Manual_Revision_1_proposed_060110.pdf.
- Please be advised that DelDOT has advertised for comment a comprehensive revision of the Standards and Regulations. The comment period ran through June 30 and DelDOT could adopt this revision as soon as January 2015. Implementation guidance has not been developed but DelDOT recommends that the developer's engineer become familiar with the proposed changes and assess whether any of them could be relevant to this project. Information on the proposed revision is available in the Register of Regulations and at http://www.deldot.gov/information/pubs_forms/revisions_to_ASR/index.shtml.

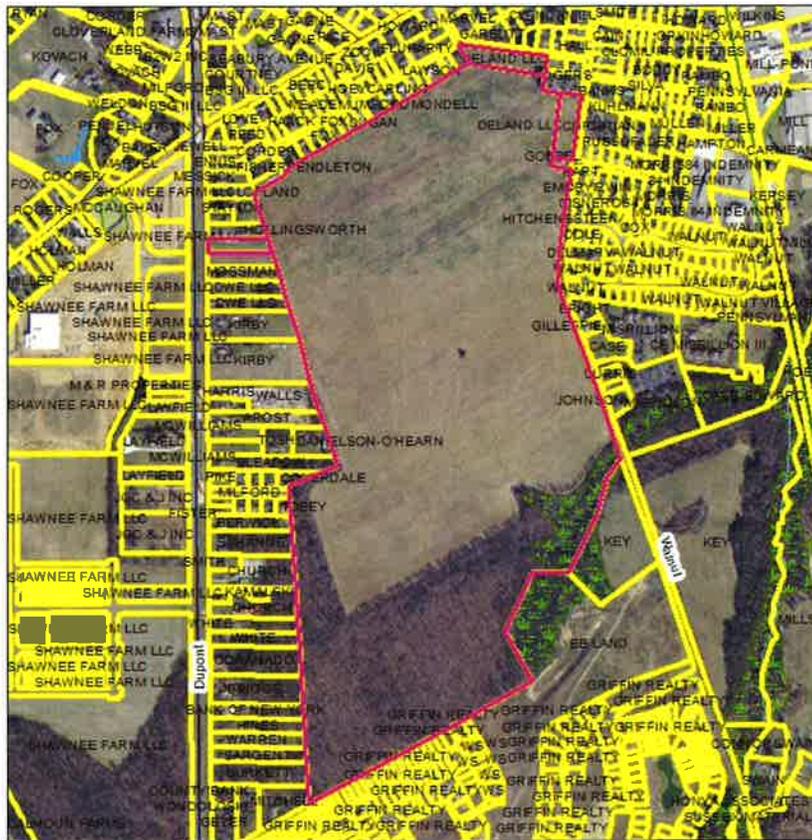
- In accordance with Section 2.15.1 and 2.15.2 (formerly 3.10.1 and 3.10.2) of the Standards and Regulations for Subdivision Streets and State Highway Access, DelDOT will require the School District to make or contribute to certain off-site improvements. While DelDOT would expect the TIS process to identify further improvements, three are apparent by inspection:
 - DelDOT would require the District to enter a signal agreement to pay part of the cost of installing a signal at US Route 113 and the site entrance;
 - DelDOT would require the District to enter a signal agreement to pay part of the cost of installing a signal at US Route 113 and Seabury Avenue; and
 - DelDOT would require the District to improve South Walnut Street to provide 12-foot lanes and 8-foot shoulders for the length of the site's frontage.
- In accordance with the minimum standards provided in Section 3.6.5 and Figure 3-3 of the Standards and Regulations for Subdivision Streets and State Highway Access, DelDOT would require dedication of right-of-way along the site's frontage on South Walnut Street.
- In accordance with Section 3.6.5 of the Standards and Regulations for Subdivision Streets and State Highway Access, DelDOT would require the establishment of a 15-foot wide permanent easement across the property frontage on South Walnut Street. The location of the easement would have to be outside the limits of the ultimate right-of-way. The easement area could be used as part of the open space calculation for the site. The following note would be required, "**A 15-foot wide permanent easement is hereby established to the State of Delaware, as per this plat.**"

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 739-9071

Wetlands

- Waters of the U.S. regulated by the U.S. Army Corps of Engineers ARE likely to be located on this property based on a review of aerial photographs, SWMP maps, Soil Surveys and USGS topographic maps. According to GIS SWMP maps, there are wetlands regulated by the U.S. Army Corps of Engineers, which have been delineated according to your application. Waters of the United States include the following: navigable waters of the United States; wetlands; tributaries to navigable waters of the United States, including adjacent wetlands and lakes and ponds; interstate waters and their tributaries, including adjacent wetlands; and all other waters of the Waters of the U.S. regulated by the U.S. Army Corps of Engineers ARE likely to be located on this property based on a review of aerial photographs, SWMP maps, Soil Surveys and USGS topographic maps. The extent of Federal jurisdiction over Waters of the United States is determined by the U.S. Army Corps of Engineers and is based on site specific conditions. Therefore, an on-site inspection by an environmental consultant is recommended to determine if Waters of the U.S. are located on the property and the limits of Federal jurisdictional. The U.S. Army Corps of Engineers can be contacted at (215) 656-6728 or online at <http://www.nap.usace.army.mil/cenap-op/regulatory/regulatory.htm>.

County: Sussex
PLUS 2010-10-01
Milford High School/Simpson Crossing



0 255 510 1,020 1,530 2,040
Feet



Map created by: Kitty Bronson
DNREC Wetlands and Subaqueous Lands

| | |
|------------------|-------------------------------|
| | Army Corps Wetlands |
| | State Regulated Wetland Lines |
| Waterbody | |
| | Estuary |
| | Lake/Pond |
| | Reservoir |
| | wetland |

TMDLs

- The project is located in the greater Delaware River and Bay drainage area, specifically within the Mispillion River watershed. In this watershed, the State of Delaware has developed specific Total Maximum Daily Load (TMDL) pollutant reduction targets for nitrogen, phosphorus, and bacteria (under the auspices of Section 303(d) of the Clean Water Act). A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited waterbody” can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; State of Delaware Surface Water Quality Standards, as amended July 11, 2004) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. The TMDL for the Mispillion River watershed calls for a 57 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for an 87 percent reduction in bacteria from baseline conditions.
- A nutrient management plan is required under the *Delaware Nutrient Management Law (3 Del. Chapter 22)* for all persons or entities who apply nutrients to lands or areas of open space in excess of 10 acres. This project’s open space appears likely to exceed this 10-acre threshold. Please contact the Delaware Nutrient Management Program at 739-4811 for further information concerning compliance requirements or, view the following weblink for additional information: <http://dda.delaware.gov/nutrients/index.shtml>

Water Supply

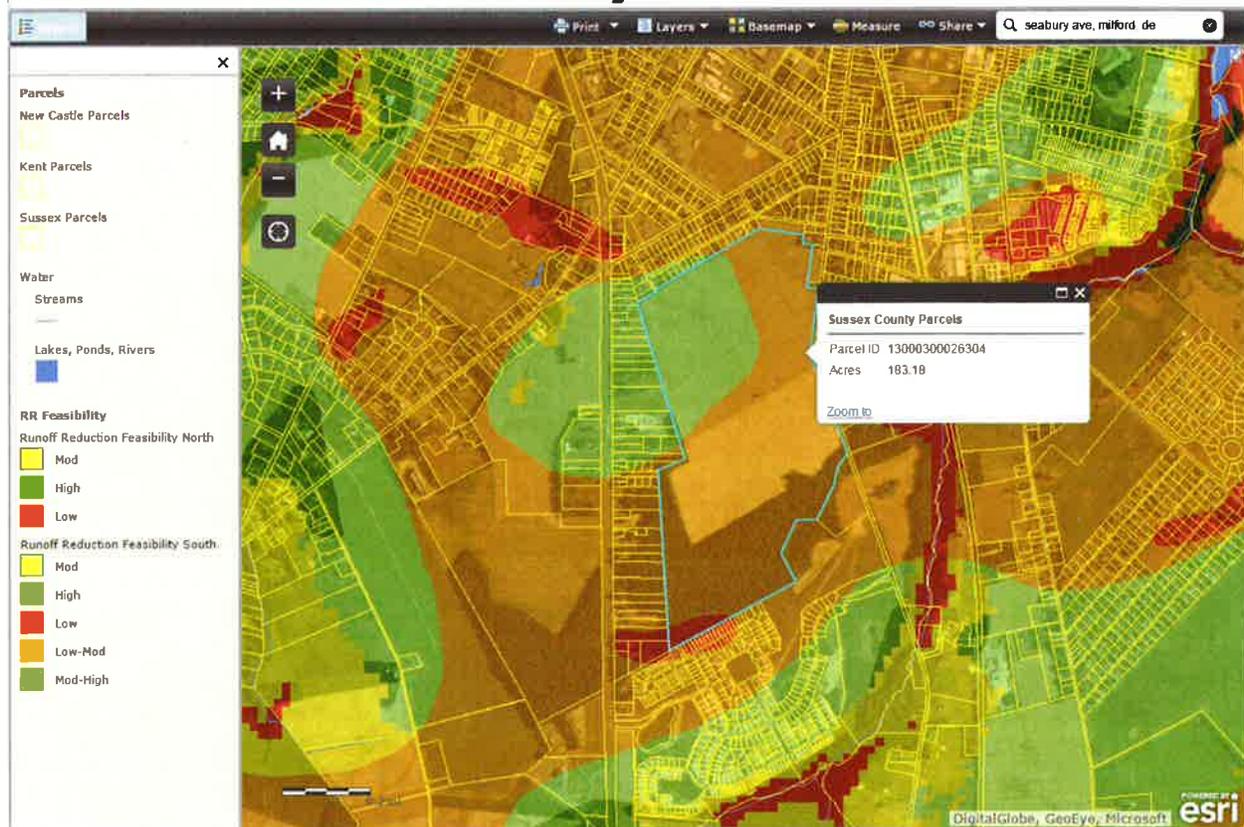
- The project information sheets state water will be provided to the project by the City of Milford via a public water system. DNREC records indicate that the project is located within the public water service area granted to the City of Milford under Certificate of Public Convenience and Necessity 91-CPCN-09.
- Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.
- All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Sediment and Stormwater Program

- A detailed Sediment and Stormwater Management Plan must be approved for construction of a new school campus. The stormwater design for the site must maximize recharge of the Resource Protection Event (equivalent to the 1-year storm) and safely convey the Conveyance (10-year) and Flooding (100-year) events with no adverse impact to the watershed.

- Investigation of the downstream stormwater conveyance system should be conducted to determine that there is an adequate stormwater outlet for the site. From initial desktop review there appears to be only one reasonable discharge location for such a large parcel and it is unclear how defined that outlet is on the site. In addition, it appears that approximately 20% of the site is rated as Moderate-High for Runoff Feasibility while the remainder of the site is rated Low or Low-Moderate. When designing the site to meet the RPv compliance, the Moderate-High rated area (green on the map below) should be set aside for managing stormwater or be retained in open space /athletic fields rather than being considered for building or parking. Clearing of the wooded area should be minimized as well in the site design to minimize storm water runoff impacts.
- If this site is selected, the first step in obtaining a Sediment and Stormwater Plan approval would be to complete a Stormwater Assessment Study and submit it to DNREC Sediment and Stormwater Program. A project application meeting will be scheduled following submittal of a complete Stormwater Assessment Study.

Stormwater Assessment Study GIS



Air Quality

- The applicant shall comply with all applicable Delaware air quality regulations. Please note that the following regulations in Table 1 – Potential Regulatory Requirements may apply to your project:

| Table 1: Potential Regulatory Requirements | |
|--|---|
| Regulation | Requirements |
| 7 DE Admin. Code 1106 - Particulate Emissions from Construction and Materials Handling | Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads. Use covers on trucks that transport material to and from site to prevent visible emissions. |
| 7 DE Admin. Code 1113 – Open Burning | Prohibit open burns statewide during the Ozone Season from May 1-Sept. 30 each year. Prohibit the burning of land clearing debris. Prohibit the burning of trash or building materials/debris. |
| 7 DE Admin. Code 1135 – Conformity of General Federal Actions to the State Implementation Plan | Require, for any “federal action,” a conformity determination for each pollutant where the total of direct and indirect emissions would equal or exceed any of the de minimus levels (See Section 3.2.1) |
| 7 DE Admin. Code 1141 – Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products | Use structural/ paint coatings that are low in Volatile Organic Compounds. Use covers on paint containers when paint containers are not in use. |
| 7 DE Admin. Code 1144 – Control of Stationary Generator Emissions | Ensure that emissions of nitrogen oxides (NO _x), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO ₂), carbon monoxide (CO), and carbon dioxide (CO ₂) from emergency generators meet the emissions limits established. (See section 3.2). Maintain recordkeeping and reporting requirements. |
| 7 DE Admin. Code 1145 – Excessive Idling of Heavy Duty Vehicles | Restrict idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes. |

For a complete listing of all Delaware applicable regulations, please look at the website: <http://www.awm.delaware.gov/AQM/Pages/AirRegulations.aspx>.

Hazardous Waste Sites

- If a release of a Regulated Substance occurs at the proposed project site, compliance of 7 Del.C., Chapter 60, 7 Del.C., Chapter 74 and DE Admin. Code 1351, State of Delaware *Regulations Governing Underground Storage Tank Systems* (the UST Regulations) is required.

- The following confirmed leaking underground storage tank (LUST) projects are located within a quarter mile from the proposed project area:
 - Olinger Residence, Facility: 9-000114, Project: S0503026 (Inactive)
 - Wilkins Fuel Co Milford, Facility: 5-000093, Project: S1307081 (Investigation)
 - Nanns Corp, Facility: 5-000437, Project: S9109201 (Inactive)
 - Royal Farms Store #51, Facility: 5-000886, Project: K0708078 (Inactive)
- Per the **UST Regulations: Part E, § 1. Reporting Requirements:**
 - Any indication of a Release of a Regulated Substance that is discovered by any person, including but not limited to environmental consultants, contractors, utility companies, financial institutions, real estate transfer companies, UST Owners or Operators, or Responsible Parties shall be reported within 24 hours to:
 - The Department's 24-hour Release Hot Line by calling 800-662-8802; and the DNREC Tank Management Section by calling 302-395-2500.

Tank Management Section

- If it is determined by the Department that there was a release of a hazardous substance on the property in question and the Department requires remediation pursuant to the Hazardous Substance Cleanup Act, the provisions of 7 Del.C., Chapter 91, Delaware Hazardous Substance Cleanup Act and the Delaware *Regulations Governing Hazardous Substance Cleanup* shall be followed.
- There are three SIRS sites found within a ½-mile radius of the proposed project:
 - Ella Harrington Site (DE-0226) is located 0.35 miles east of the proposed project. The Site was a former scrap metal junkyard about 7 acres in size. A Preliminary Assessment was conducted in May 1990 and it was determined that the Site was a low priority. Currently a Facility Evaluation is being conducted to further investigate soil and groundwater.
 - Milford Salvage (DE-0335) is located 0.39 miles east of the project property. The Site has been in operation since 1954, processing scrap vehicles. A Preliminary Assessment was conducted in September 2008. A Site Inspection is currently being conducted on the Site to evaluate Site soil and groundwater.
 - Sussex Material (DE-1342) is located 0.44 miles to the east of the project property. The Site was used as a temporary storage facility in the demolition of industrial plants. A Limited Subsurface Exploration was conducted in December 2003 where test pits and soil samples were collected. A Brownfield Investigation Work Plan was drafted in January 2005. The Work Plan required additional soil samples and the installation of monitoring wells. The Proposed Plan of Remedial Action (February 2006) was adopted as the Final Plan in April 2006. The Final Plan required the removal of underground storage tanks and the placement of an Environmental Covenant. The Site was issued a Certification of Completion of Remedy (COCR) in October 2008.

Recommendations/Additional Information

This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped (**but in no way required**) that the applicant will open a dialogue with the relevant agencies to discuss how these suggestions can benefit the project.

Office of State Planning Coordination - Contact David Edgell 739-3090

- This proposed school site is located in the southern part of the City of Milford, and it is bounded on the North and East by existing city neighborhoods that are built on a traditional grid street pattern, and some streets have existing sidewalks on at least one side. This site offers an excellent opportunity to link into the existing street pattern with sidewalks and / or bike paths to encourage walking and biking to school for students, staff, and other members of the community. Should this site be approved and selected, our office encourages the District to take full advantage of this unique location during the site planning and design phase and put an emphasis on pedestrian and bicycle access.
- It is further recommended that the District undertake a full walkability analysis of the site early in the design process to determine how many students live in the walk zone and would be able to walk to school. Such an analysis can also identify impediments (such as gaps in the sidewalk) to walking and biking for students. Assuming a walk zone of 2 miles, the majority of the high school students living in downtown Milford should be able to walk to school, provided there is continuity in the sidewalk network. As we have seen in other districts, it may prove to be cost effective to improve sidewalk connectivity in order to offset future bussing costs. Our office can provide you with information and examples of how this has been accomplished for other recently constructed school sites when you get to that stage of design.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- DelDOT recommends that bicycle and pedestrian connections be provided, to encourage walking or bicycling to school from the neighborhoods to the north and east of the site where possible. More specific recommendations or requirements would be contingent on the development of a plan for the site.
- Be advised that the standard general notes have been updated and posted to the DelDOT website. Please begin using the new versions and look for the revision date of May 21, 2014 for the Record/Site Plan and Construction Plan general notes and the Temporary Traffic Control general notes. The notes can be found at http://www.deldot.gov/information/business/subdivisions/DelDOT_Development_Coordination_Plan_Sheet_Notes.doc

- Because the proposed development would generate more than 200 vehicle trips per day, a Pre-Submittal Meeting is required before plans are submitted for review. Guidance on what will be covered at this meeting and how to prepare for it is located at http://www.deldot.gov/information/business/subdivisions/Pre-Submittal_Meeting_Requirements.doc. The form needed to request this meeting is available at http://www.deldot.gov/information/business/subdivisions/Meeting_Request_Form.doc.
- As shown on the Investment Level map associated with the *Strategies for State Policies and Spending*, the subject development is located in a Level 1 area. DelDOT's Shared-Use Path and/or Sidewalk Process policy (available at http://www.deldot.gov/information/business/subdivisions/SUP_Sidewalk_Process.pdf) provides that in Level 1 and 2 areas a path or sidewalk must be installed along the State-maintained road frontage. If a physical impossibility exists, and none is apparent here, then a fee in lieu of construction shall be paid.

Department of Natural Resources and Environmental Control – Contact Kevin Colye 739-9071

Soils Assessment

- Based on NRCS soil survey mapping update, the soil mapping units mapped in the immediate vicinity of the proposed project contain mostly well-drained soils. Well-drained soils, generally, have few limitations for development (Figure 1).



Figure 1: NRCS soil survey mapping update mapping in the immediate vicinity of the proposed project

Nuisance Waterfowl

- The following comments apply if there is a stormwater management pond proposed in the study area (site plans were not provided to indicate the location of stormwater management ponds). Wet ponds created for stormwater management purposes may attract resident Canada geese and mute swans that will create a nuisance for community residents. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns surrounding ponds provide attractive habitat for these species.

To deter waterfowl from taking up residence in these ponds, DNREC recommends planting the surrounding open space with a mix of native wildflower plantings (to be planted in

accordance with the Sediment and Stormwater Plan approval agency requirements). It is best to mow the open space area surrounding the pond only once a year, either in March or November. If mowing must occur more often, it would be helpful to leave a minimum buffer of 15-30 feet in width to be mowed annually. This area would be necessary to adequately deter the waterfowl from inhabiting the area (when the view of the surrounding area from the pond is blocked, geese can't scan for predators and are less likely to reside and nest in the area of the pond). In addition to deterring nuisance waterfowl, the native wildflower mix will also serve to attract bees, butterflies, and other pollinators, and reduce run-off, which can contain oil and other pollutants that homeowners may use on their lawns and driveways. DNREC suggests native tree and native herbaceous planting wherever practicable. Program botanist, Bill McAvoy would gladly assist in drafting a list of plants suitable for this site. Bill can be contacted at (302) 735-8668 or William.McAvoy@state.de.us.

Wetland Buffers

- A minimum 100-foot buffer should be left intact around the perimeter of wetlands on the site to protect their function and integrity. This recommendation is based on peer reviewed scientific literature that shows an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. Upland buffers also serve as habitat for many terrestrial species that are dependent on aquatic and wetlands habitats for a portion of their annual life cycle. Lot lines, roadways, and infrastructure should not be placed within this buffer zone. Buffers are an integral component of aquatic and wetland habitats, reducing the amount of sediments, pollutants, and other non-point source material that may affect the function and integrity of habitat and the condition and survivability of aquatic organisms. Also, tree clearing should be limited to the greatest extent practicable.

Additional information on TMDLs and water quality

- In response to concerns about the need for reducing nonpoint source nutrient (nitrogen and phosphorus) and bacterial pollutants to levels sufficient to meet the prescribed TMDL reduction requirements in the Mispillion watershed, a multifaceted and comprehensive process known as a Pollution Control Strategy (PCS) has been developed to enable such reductions. Specifically, a PCS is a combination of best management practices and control technologies that reduce nutrient and bacterial pollutant runoff loading in waters of a given watershed to level(s) consistent with the TMDL(s) reduction levels specified for that watershed. The PCS for the Mispillion River watershed consists of recommendations from the following three areas: agriculture, storm water, and wastewater. Additional information about Mispillion River PCS is available from the follow web link:

<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedManagementPlans.aspx>.

In further support of the PCS, the applicant is also strongly urged to reduce nutrient and bacterial pollutants through voluntary commitment to the implementation of the following recommended BMPs:

- Maintain as much of the existing forested cover as possible; DNREC further suggests additional native tree and native herbaceous planting, wherever possible.

- Maintain or install 100-foot minimum buffer width from all wetlands. Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882.), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from all waterbodies and delineated wetlands (i.e., USACE approved delineation). In essence, maintaining or providing a buffer width less than 100 feet is not sufficiently protective of water quality.
- Calculate post-construction surface imperviousness with all forms of created surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, and roads) included in the calculation.
- Use of green-technology storm water management (in lieu of open-water management structures) and raingardens as BMPs for mitigating nutrient and bacterial pollutant runoff from increases in surface imperviousness. Please contact Lara Allison at 739-9939 for further information about the possibility for installing a raingarden(s) on this parcel.
- Use of pervious paving materials (instead of conventional asphalt and concrete) to mitigate the negative impacts from pollutant runoff.
- Voluntarily assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the “Nutrient Load Assessment protocol.” The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) that result from the conversion of individual or combined land parcels to a different land use(s), while providing applicants with quantitative information about their project’s impact(s) on baseline water quality. DNREC strongly encourages the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact Jen Walls or John Martin at 302-739-9939 for more information on the protocol.

Additional information on tank management

- Site Investigation Restoration Section (SIRS) strongly recommends that the land owner perform environmental due diligence of the property by performing a Phase I Environmental Site Assessment (including a title search to identify environmental covenants) in accordance to Section 9105(c) (2) of the Delaware Hazardous Substance Cleanup Act (HSCA). While this is not a requirement under HSCA, it is good business practice and failure to do so will prevent a person from being able to qualify for a potential affirmative defense under Section 9105(c) (2) of HSCA.
- Additional remediation may be required if the project property or site is re-zoned by the Town.
- Should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour

emergency number (800-662-8802). SIRB should also be contacted as soon as possible at 302-395-2600 for further instructions.

Additional information on hazardous waste sites

- When contamination is encountered, PVC pipe materials should be replaced with ductile steel and nitrile rubber gaskets in the contaminated areas.
- If any aboveground storage tanks (ASTs) less than 12,500 gallons are installed, they must be registered with the TMS. If any ASTs greater than 12,500 gallons are installed, they are also subject to installation approval by the TMS.

Additional information on air quality

- New schools may emit, or cause to be emitted, additional air contaminants into Delaware’s air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:
 - Emissions that form ozone and fine particulate matter; Delaware currently violates federal health-based air quality standards for ozone,
 - The emission of greenhouse gases which are associated with climate change, and
 - The emission of air toxics.
- Air emissions generated from new schools include emissions from the following activities:
 - Area sources such as painting, maintenance equipment and the use of consumer products like roof coatings and roof primers.
 - The generation of electricity, and
 - All transportation activity.
- Based on the information provided, the three air emissions components (i.e., area, electric power generation, and mobile sources) for the project could not be quantified. DAQ was able, however, to quantify the mobile emissions based on the proposed daily trip data presented in the application and data taken from the ITE Trip Generation Manual, 8th Edition. Table 2 represents the actual impact the New Milford High School Site project may have on air quality.

| Table 2: Projected Air Quality Emissions for New Milford High School Site | | | | | |
|--|----------------------------------|-----------------------|-----------------------------------|--|-----------------------------------|
| Emissions Attributable to New Milford High School Site (Tons per Year) | Volatile Organic Compounds (VOC) | Nitrogen Oxides (NOx) | Sulfur Dioxide (SO ₂) | Fine Particulate Matter (PM _{2.5}) | Carbon Dioxide (CO ₂) |
| Mobile | 2.0 | 2.6 | * | * | * |

(*) Indicates data is not available

- Note that emissions associated with the actual construction of the school, including automobile and truck traffic from working in, or delivering products to the site, as well as site

preparation, earth moving activities, road paving and other miscellaneous air emissions, are not reflected in the table above.

- DNREC encourages sustainable growth practices that:
 - Control sprawl;
 - Preserve rural and forested areas;
 - Identify conflicting land use priorities;
 - Encourage growth on previously developed sites and denser communities while at the same time protect our diminishing land base;
 - Coordinate transportation, housing, environment, and climate protection plans with land use plans; and
 - Demonstrate that communities can achieve the qualities of privacy, community, and contact with nature without degrading the natural environment or generating unacceptable environmental costs in terms of congestion, use of natural resources, or pollution.

- Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:
 - Constructing with only energy efficient products. Energy Star qualified products are up to 30% more energy efficient. Savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Every percentage of energy efficiency translates into a percent reduction in pollution. The Energy Star Program is excellent way to save on energy costs and reduce air pollution.
 - Offering geothermal and/or photo voltaic energy options. These systems can significantly reduce emissions from electrical generation and from the use of oil or gas heating equipment.
 - Constructing with high albedo, high solar reflectance materials. This includes roofing and hardscape. These materials help to reduce heat island impacts and, by extension, help to minimize the potential for localized ground-level ozone formation. These materials also help reduce demands on air conditioning systems and save on energy costs.
 - Providing shade for parking areas. Approaches may include architectural devices, vegetation, or solar panels. Providing shade for parking areas helps to reduce heat island impacts, and, by extension, helps to minimize the potential for localized ground-level ozone formation. Such measures can also have the additional benefit of channeling or infiltrating stormwater.
 - Encouraging the use of safe multimodal transportation. This measure can significantly reduce mobile source emissions. For every vehicle trip that is replaced by the use of a sidewalk, bike path, or mass transit, 7 pounds of VOC and 11.5 pounds of NOx are reduced each year.
 - Using retrofitted diesel engines during construction. This includes equipment that is on-site as well as equipment used to transport materials to and from site.
 - Using pre-painted/pre-coated flooring, cabinets, fencing, etc. These measures can significantly reduce the emission of VOCs from typical architectural coating operations.

- Planting trees in vegetative buffer areas, particularly those between the site and adjacent residential areas. Trees reduce emissions by trapping dust particles and replenishing oxygen. Trees also reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.

This is a partial list, and there are additional things that can be done to reduce the impact of the development. The applicant should submit a plan to the DNREC DAQ which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into the New Milford High School Site project.

Department of Education- Contact Despina Wilson 735-4040

- The DOE will continue to work with the district, architect, site engineer, municipal government and various state agencies regarding the project. The DOE reserves the right to provide continued and on-going comments and input as the project develops.

Division of Public Health-Contact Laura Saperstein 744-1011

The Delaware Division of Public Health (DPH) is pleased to be able to participate in the PLUS application process. In keeping with its mission to protect and promote the health of all people in Delaware, DPH looks for opportunities to encourage and enhance our population's health behaviors that will result in healthy people and healthy communities.

Community design can impact the health of a population. Studies show that persons in lower-income communities, the elderly, and children often suffer more from consequences of inadequate land-use and transportation. Additionally, physical activity has a direct correlation to many chronic diseases, including hypertension, diabetes and obesity. In 2012, 39.1% of Delawareans reported a BMI of "overweight," and 26.9% reported a BMI as "obese." To that end, DPH looks to make recommendations for land-use that can empower Delawareans to make good health behaviors a part of their daily lives.

- DPH is pleased to see the many different areas in which the Milford High School can contribute to the Milford community's health. Specifically this site has the opportunity to facilitate active transportation by connecting to an existing town-wide sidewalk infrastructure laid out on a grid-style street network. An area of less than 2 miles from the proposed project location connects with a substantial percentage of Milford's population, transit stops, business and civic establishments, and off-site recreational facilities. Additionally, this site has the potential to further facilitate active recreation if it aligns with the identified priorities in the Statewide Comprehensive Outdoor Recreation Plan regional priorities.
- DPH feels the Milford High School has the opportunity to increase positive health behaviors for its community by incorporating the following recommendations into its land development proposal:

- Consider including sidewalks and bike paths giving the community the opportunity to incorporate physical activity into their daily routines.
- Consider including safety-lighting for open spaces (athletic fields), as well as for sidewalks or paths additionally facilitating the ability of the community to incorporate physical activity into daily routines.
- Consider joint-use agreements as part of the school's wellness plan.
- Consider a Safe-Routes-to-School program as part of a Comprehensive School Physical Activity plan.

City of Milford Comments-Contact Richard Carmean 424-3712

General

- The general site is informally referred to as the Simpson Farm. The proposed site consists of a total of four (4) parcels per the attachment that was included with the PLUS application. The tax numbers for these parcels are 1-30-3.15-3.00, 1-30-3.00-263.00, 1-30-3.00-263.04, and 1-30-3.15-4.00. However, the City was unable to locate parcel 1-30-3.00-263.04 on the Sussex Mapping site; and, the City's records do not recognize 1-30-3.15-3.00 or 4.00. The total area of the site is approximately 192 (+/-) acres. The site is bound on the east for approximately 2,425 feet by South Walnut Street, on the north for approximately 600 feet by Wilbur Street, and on the west for approximately 200 feet by South DuPont Highway.

Zoning

- According to the City's records, all of the parcels which compose the proposed site are zoned R-1 – Single Family Residential. Public schools are permitted in the R-1 zoning district as a conditional use. Provided the City Planning Commission and Council approve a request for a conditional use, the City finds nothing that would disqualify the use of this site for a public school.

Water

- There are existing 10-inch waters main available to the site. One of these 10-inch mains exists along the east shoulder of South DuPont Highway; and the other exists along the east shoulder of South Walnut Street. Please see the attached water utility layout drawing. These mains would be required to be interconnected in at least one location. Although the City would need to verify the resulting demand, it does not anticipate any difficulties in providing water service to a proposed high school.

Sewer

- An existing 12-inch sewer main is currently in place along the northwest side of the largest parcel which makes up parcel 1-30-3.00-262. A 12-inch sewer main also bisects this parcel, east-to-west, at its northerly end. And, there is an existing 8-inch sewer main in place along the west shoulder of South DuPont Highway. Please see the attached sewer utility payout drawing. Although the City would have to confirm with Kent County to verify their available treatment capacity, the City does not anticipate any difficulties in accommodating wastewater generated by a proposed high school.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in cursive script, appearing to read "Constance C. Holland".

Constance C. Holland, AICP
Director, Office of State Planning Coordination

CC: City of Milford



Google earth

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900





Google earth



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Google earth

March 11, 2005

Ms. Karen Brittingham
City Planner
City of Milford
201 South Walnut Street
P.O. Box 159
Milford, DE 19963

Dear Ms. Brittingham:

The attached Traffic Impact Study (TIS) review letter for the **Simpson Property** subdivision has been completed under the responsible charge of a registered professional engineer whose firm is authorized to work in the State of Delaware. They have found the TIS to conform to DelDOT's Rules and Regulations for Subdivision Streets and other accepted practices and procedures for such studies. DelDOT accepts this TIS review and concurs with the recommendations. We are providing it to you in fulfillment of our joint agreement regarding the review of TIS. If you have any questions concerning this letter or the attached review letter, please contact me at (302) 760-2134.

Sincerely,

Todd J. Sammons
Project Engineer

TJS:rr

Enclosures

cc with enclosures: Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Dennis Hughes, Davis, Bowen & Friedel
Mr. Mark Luszcz, McCormick Taylor
Mr. Lawrence Lank, Sussex County Planning and Zoning Commission
DelDOT Distribution

DelDOT Distribution

Nathan Hayward III, Secretary of Transportation
Frederick H. Schranck, Deputy Attorney General
Darrel Cole, Chief of Community Relations, Public Relations
Carolann D. Wicks, Director, Transportation Solutions (DOTS)
Ralph A. Reeb, Director, Division of Planning
Robert F. Carver, Jr., Capital Budget Manager, Finance
Michael H. Simmons, Assistant Director, Project Development South, DOTS
Donald D. Weber, Assistant Director, Traffic, DOTS
Joseph Cantalupo, Assistant Director, Statewide & Regional Planning
Gregory P. Oliver, Assistant Director, Statistics, Research and Special Programs
Theodore G. Bishop, Assistant Director, Development Coordination
Thomas E. Meyer, Traffic Studies Manager, Traffic, DOTS
William J. Dryden, Transportation Planner, Project Development South, DOTS
David Dooley, Service Development Planner, Delaware Transit Corporation
Drew A. Boyce, Subdivision Engineer, Development Coordination
T. William Brockenbrough, Jr., County Coordinator, Development Coordination
John T. Fiori, Subdivision Manager, Development Coordination

March 10, 2005

Mr. Todd J. Sammons
Project Engineer
DelDOT Division of Planning
P.O. Box 778
Dover, DE 19903

RE: Agreement No. 1294
Traffic Impact Study Review Services
Task No. 16 – Simpson Property

Dear Mr. Sammons,

McCormick Taylor, Inc. has completed its review of the Traffic Impact Study (TIS) prepared by Davis, Bowen & Friedel, Inc. (DBF), for the Simpson Property dated November, 2004. This task was assigned as Task Number 16. The report was prepared in a manner generally consistent with DelDOT's *Rules and Regulations for Subdivision Streets*.

The TIS evaluates the impacts of the Simpson Property development, which consists of 697 single-family detached homes, 603 townhouses/condominiums, and 30,000 ft² of retail space on approximately 192 acres of land that has been annexed into the City of Milford, Sussex County, Delaware. The proposed project's location is south of downtown Milford, south of New Street with roadway frontage on U.S. Route 113 and along Walnut Street (Sussex Road 213). Access to the development would be provided from six proposed access points: two along Walnut Street, one along U.S. Route 113, and one each to connect to Cherry Street, Elm Street and Wilbur Streets. The first access to Walnut Street will be a new intersection, while the second access to Walnut Street will be opposite the existing access to Mispillion Apartments. The access onto Wilbur Street will be a new intersection between Walnut Street and Pine Street. The two access points to Cherry Street and Elm Street will tie into an existing residential area that borders the northern frontage of the development site. Based on our review, we have the following comments and recommendations.

Several options for access onto U.S. Route 113 were examined. We recommend that all movements be allowed at the proposed U.S. Route 113 site access intersection except for the westbound left-turn movement out of the site. Given this access option, only one intersection experiences level of service deficiencies: U.S. Route 113 & Seabury Avenue. Specific details of our analysis and conclusions are included in the attached detailed TIS review.

Should the City of Milford choose to approve the Simpson Property, the following items should be incorporated into the site design, reflected on the record plan and should be completed during or prior to the site entrance construction:

1. The developer should improve Walnut Street along the site frontage. The actual improvement to be implemented will be coordinated between the City of Milford and DelDOT. At a minimum, vehicular, bicycle, and pedestrian traffic will have to be accommodated by the improvement.
2. The developer should provide six unsignalized access points, generally as proposed in the TIS. One access proposed in the TIS would be an extension of Pine Street into the proposed development. Although there are no expected level of service issues, it is not desirable to extend Pine Street, due to the five-way intersection of Pine Street/Wilbur Street/New Street that would be created. Therefore, the developer has suggested creating a new access point off of Wilbur Street, between Pine Street and Walnut Street. We agree with this proposed access modification. Five foot shoulders should be maintained through any required right turn lanes at all site access points.
3. A southbound left turn lane and northbound right turn lane should be installed on U.S. Route 113 at the site entrance. The entrance and median should be designed to physically prohibit westbound left-turn traffic out of the site.
4. The development's roadways should be of ample width to accommodate bicycle use, specifically along site entrances on Walnut Street and Wilbur Street, and extensions of Cherry Street and Elm Street into the proposed development. This will facilitate access to the Southern Delaware Heritage Trail.
5. A minimum of a five-foot sidewalk with a three foot buffer should be constructed on Walnut Street along the site frontage, and sidewalks should be constructed to connect with existing facilities along Cherry Street, Elm Street, and Wilbur Street. The Simpson Property should also contain an internal sidewalk network.
6. Substandard guardrail at two locations on North Old State Road, between the southern site entrance and Johnson Road, should be replaced with guardrail conforming to existing DelDOT standards.
7. A cross access easement to the proposed Central Parke at Milford development should be created to provide development interconnectivity.

The following items should be incorporated into the site design, reflected on the record plan and should be completed prior to the issuance of building permits for the residential units, and prior to the issuance of commercial certificates of occupancy in the proposed development:

8. The developer should provide means of bicycle storage near the entrances to the buildings in the retail portion of the development in order to encourage bicycle usage.

9. The developer should enter into a traffic signal agreement with DeIDOT for the intersection of U.S. Route 113 & Seabury Avenue. The agreement should include pedestrian signals, crosswalks, and interconnection at DeIDOT's discretion.

Please note that this review generally focuses on capacity and level of service issues; additional safety and operational issues will be further addressed through DeIDOT's subdivision review process.

Additional details on our review of this TIS are attached. Please contact me at (302) 738-0203 or through e-mail at mluszcz@mtmail.biz if you have questions concerning this correspondence.

Sincerely,
McCormick Taylor, Inc.


Mark Luszcz, P.E., PTOE, AICP
Associate

Enclosures

General Information

Report date: November 2004

Prepared by: Davis, Bowen & Friedel, Inc.

Prepared for: Simpson Farm, LLC

Tax Parcel: 1-30-3.00-263.04

Generally consistent with *DelDOT's Rules and Regulations for Subdivision Streets*: Yes

Project Description and Background

Description: 697 single-family detached homes, 603 townhouses/condominiums, and 30,000 ft² of retail space.

Location: south of downtown Milford, south of New Street with roadway frontage along U.S. Route 113 and along Walnut Street (Sussex Road 213), Sussex County, Delaware.

Amount of land to be developed: approximately 191.80 acres

Land use approval(s) needed: Subdivision plan

Proposed completion date: 2005

Proposed access locations: Access to the development would be provided from six proposed access points: two along Walnut Street, one along U.S. Route 113, one along Wilbur Street, and one each to connect to Cherry Street and Elm Street

Livable Delaware

(Source: Delaware Strategies for State Policies and Spending, July 2004)

Location with respect to the Strategies for State Policies and Spending Map of Delaware: The proposed location of the Simpson Property is located within an Investment Level 1 area.

Description of Investment Level:

Investment Level 1

These areas are often municipalities or urban/urbanizing places where density is generally higher than in surrounding areas. Areas classified as Investment Level 1 are population centers built around a traditional central business district, which offers a wide range of opportunities for employment, shopping and recreation. Investment Level 1 areas are considered to drive Delaware's economy and therefore reinvestment and redevelopment are encouraged.

In Investment Level 1 Areas, state investments and policies should support and encourage a wide range of uses and densities, promote other transportation options, foster efficient use of existing public and private investments, and enhance community identity and integrity. Typical transportation projects included new or expanded facilities and services for all modes of transportation, including public transportation facilities and services. Projects will also include those that manage traffic flow and congestion, support economic development and redevelopment efforts, and encourage connections between communities and the use of local streets for local trips.

Proposed Development's Compatibility with Livable Delaware: The Simpson Property development plan generally adheres to the policies stated in the 2004 update of the Livable Delaware "Strategies for State Policies and Spending." The development's location is within the City of Milford and adjacent to existing commercially zoned property. The plan creates a mixed use infill development that concentrates growth in and around existing communities and infrastructure, which is consistent with Livable Delaware strategies.

Comprehensive Plans

The proposed development is within the City of Milford and Sussex County, Delaware. The Comprehensive Plan for the City of Milford and for Sussex County was utilized.

City of Milford Comprehensive Plan: *(Source: 2003 City of Milford Comprehensive Plan Update)* This plan indicates existing land use is zoned as agriculture land for the subject parcel. Future land use indicates the area is designated for residential/mixed-use zoning (R-1, R-2, & R-3), with the proposed development within defined growth regions of the City of Milford.

Southeast Milford continues to be the area of greatest activity for new single-family residential projects (both attached and detached). A recent water and sewer expansion has permitted residential growth. Future land use is primarily residential housing in low-density or cluster development. Anticipated commercial land use will provide the residential neighborhoods with local services.

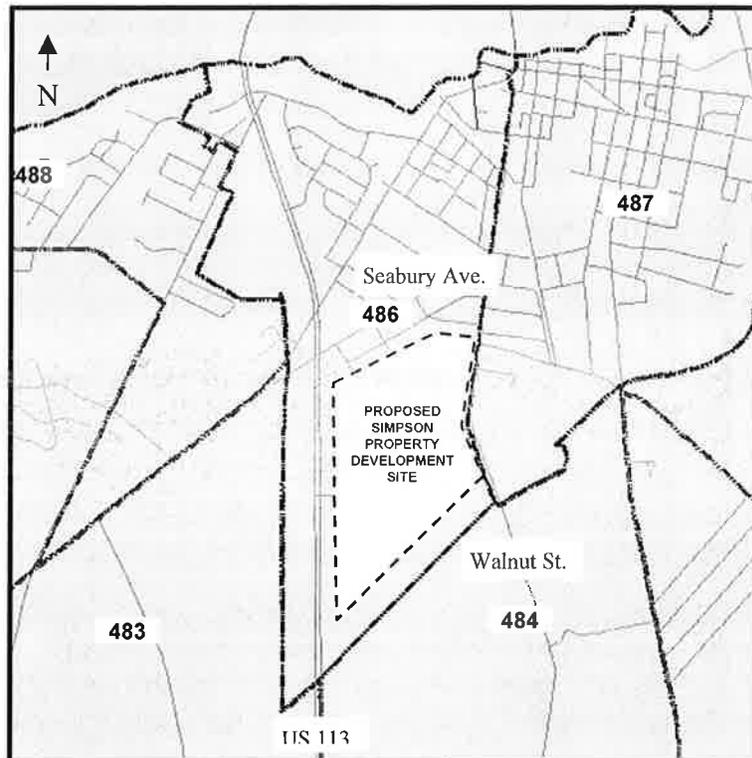
Sussex County Comprehensive Plan: *(Source: 2003 Sussex County Comprehensive Plan Update)* The plan promotes development within growth areas as opposed to rural areas, encourages a mixture of housing types and sizes, combined with open space, and encourages developers to incorporate "Livable Delaware" concepts into its subdivision design.

Proposed Development's Compatibility with Comprehensive Plans: The development is generally consistent with both the City of Milford's and Sussex County's Comprehensive Plans and consists of a combination of residential and commercial/retail development that is within a region designated as a "Developing Area" by both comprehensive plans. In addition, tidal wetlands are protected in both comprehensive plans, and are present on this development parcel.

Regional Transportation Plan

Transportation Analysis Zone (TAZ) where development would be located: 486 (Peninsula Code Designation)

TAZ Boundaries:



Current employment estimate for TAZ: 2,279 jobs in 2000.

Future employment estimate for TAZ: 3,662 jobs in 2030

Current population estimate for TAZ: 1,187 in 2000

Future population estimate for TAZ: 1,187 in 2030

Current household estimate for TAZ: 434 in 2000

Future household estimate for TAZ: 480 in 2030

Relevant committed developments in that TAZ: n/a

Would the addition of committed developments to current estimates exceed future projections: No.

Would the addition of committed developments and the proposed development to current estimates exceed future projections: Yes.

Although this development will exceed the population and household estimates for this TAZ, it appears to be consistent with the type of development encouraged by the Sussex County and City of Milford Comprehensive Plans, and Livable Delaware.

Relevant Projects in the DelDOT Capital Transportation Program (2005-2010)

There are three DelDOT projects/programs within the study area. The first project/program is part of the DelDOT Corridor Capacity Preservation Program for US Route 113 from the Milford City Limits south to the Maryland State Line. US Route 113 north of the southern Milford City limits has already been modified to preserve capacity with improvements similar to those made at the intersection of US Route 113 and Seabury Avenue. The general purpose of the program is to ensure that the existing regional arterial highways are able to efficiently carry regional traffic without impedance from the effects of local development.

The second project is a planning study being conducted by DelDOT to consider capacity improvements for the US Route 113 corridor from north of Milford to the Delaware/Maryland state line. The project will continue to study viable alternatives for north/south capacity improvements throughout Sussex County. The extent and scope of this potential project are not yet known. Many alternatives are being studied, both on and off existing alignments. DelDOT is currently in the process of narrowing down the range of options being considered, and will recommend a few for more detailed study. Improvements needed at specific locations along the corridor will be identified as DelDOT moves forward with the project development process.

The third project is a reconstruction project at the intersection of U.S. Route 113 & Seabury Avenue. This intersection was identified through a 1998 Highway Safety Improvement Program. The project involved the installation of channelization on the eastbound Seabury Avenue approach and within the median opening to prohibit eastbound through and left-turn movements, westbound through movements, and northbound left-turn movements. This project has been constructed.

Trip Generation

Trip generation for the proposed Simpson Property residential development was computed using land uses and equations contained in the manual entitled, Trip Generation, Seventh Edition, published by the Institute of Transportation Engineers (ITE). Land Use Code 210 (Single Family Housing - Detached), Land Use Code 230 (Townhouses/Condominiums), and Land Use Code 814 (Specialty Retail) was used in the TIS to estimate the amount of new traffic generated by the development.

Table 1. Simpson Property Trip Generation

| Land Use | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|--|-------------------------|------------|------------|-------------------------|------------|------------|
| | In | Out | Total | In | Out | Total |
| Residential Land Use | | | | | | |
| Single Family Detached Homes – 697 units | 126 | 376 | 502 | 397 | 223 | 620 |
| Internal Capture Trips | - | - | - | 4 | 3 | 7 |
| Net External Trips | 126 | 376 | 502 | 393 | 220 | 613 |
| Pass-by Trips | - | - | - | - | - | - |
| Primary Housing Trips | 126 | 376 | 502 | 393 | 220 | 613 |
| Townhouses – 603 units | 37 | 179 | 216 | 174 | 86 | 260 |
| Internal Capture Trips | - | - | - | 2 | 1 | 3 |
| Net External Trips | 37 | 179 | 216 | 172 | 85 | 257 |
| Pass-by Trips | - | - | - | - | - | - |
| Primary Townhouse Trips | 37 | 179 | 216 | 172 | 85 | 257 |
| TOTAL PRIMARY RESIDENTIAL TRIPS | 163 | 555 | 718 | 565 | 305 | 870 |
| Retail Land Use | | | | | | |
| Specialty Retail Center – 30,000 ft ² | 126 | 137 | 263 | 41 | 53 | 94 |
| Internal Capture Trips | - | - | - | 4 | 6 | 10 |
| Net External Trips | 126 | 137 | 263 | 37 | 47 | 84 |
| Pass-by Trips | - | - | - | 13 | 16 | 29 |
| Primary Retail Trips | 126 | 137 | 263 | 24 | 31 | 55 |
| TOTAL PRIMARY RETAIL TRIPS | 126 | 137 | 263 | 24 | 31 | 55 |
| TOTAL PRIMARY DEVELOPMENT TRIPS | 289 | 692 | 981 | 589 | 336 | 925 |

Overview of TIS

Intersections examined:

1. Walnut Street (Sussex Route 213) @ North Site Entrance
2. Walnut Street (Sussex Route 213) @ Mispillion Apartments/South Site Entrance
3. US Route 113 @ Site Entrance (right turns in and out, left turn in)
4. North Old State Road @ Johnson Road (Sussex Route 207)
5. US Route 113 @ U-Turn crossover north of Donovan Street
6. US Route 113 @ Johnson Road/Fitzgeralds Road (Sussex Route 207)
7. US Route 113 @ Seabury Avenue (Sussex Route 36A)
8. New Street @ Cherry Street
9. New Street @ Elm Street
10. New Street @ Pine Street/Wilbur Street
11. New Street @ Pine Street/Wilbur Street/Site Entrance
12. Seabury Avenue @ Cherry Street
13. Seabury Avenue @ Elm Street
14. Seabury Avenue @ Pine Street
15. Walnut Street @ Clarke Avenue
16. Walnut Street @ Seabury Avenue/Clarke Avenue
17. Walnut Street @ Wilbur Street
18. Walnut Street @ McCoy Street (Sussex Route 211)

Conditions examined:

1. 2004 Existing conditions;
2. 2010 Pre-Development conditions: future traffic volumes with committed developments;
3. 2010 Post-Development conditions: future traffic volumes with committed developments and the completion of the Simpson Property development (No access to U.S. Route 113);
4. 2010 Post-Development conditions: future traffic volumes with committed developments and the completion of the Simpson Property development (Right turn access only from U.S. Route 113); and
5. 2010 Post-Development conditions: future traffic volumes with committed developments and the completion of the Simpson Property development (Right turns in and out and left turns in access on U.S. Route 113).

Peak hours evaluated: Weekday morning (AM) and Weekday evening (PM) peak hours.

Committed developments considered for 2010 Post-Development Conditions:

1. Hearthstone Manor at New Milford (178 single-family detached houses and 952 condominiums and apartments)
2. Meadows at Shawnee (179 single-family detached houses)
3. Knollac Acres (64 single-family homes)
4. Central Parke at Milford (722 age-restricted dwellings, 344 detached units, 378 attached units)
5. Fitzgerald Industrial Park (10-acre industrial park associated with existing auto salvage business)
6. Delaware Solid Waste Authority Transfer Station (11 acres)

Intersection Descriptions

Walnut Street (Sussex Road 213) @ North Site Entrance: A proposed three-legged intersection with two-way stop control along the minor street approach, which provides site access to Walnut Street.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (Walnut Street) Single lane approach, no stop control.

Southbound approach: (Walnut Street) Single lane approach, no stop control.

Eastbound approach: (Site Entrance) Single lane approach, stop controlled.

Walnut Street (Sussex Road 213) @ Mispillion Apartments/South Site Entrance: This currently is a three-legged intersection with two-way stop control for the minor street approach, which provides access to Mispillion Apartments. It is also a proposed four-way intersection with two-way stop control for the new site entrance (opposite the Mispillion Apartment driveway) and for the Mispillion Apartments driveway.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (Walnut Street) Single lane approach, no stop control.

Southbound approach: (Walnut Street) Single lane approach, no stop control.

Eastbound approach: (Site Entrance) Single lane approach, stop controlled.

Westbound approach: (Mispillion Apartments) Single lane approach, stop controlled.

US Route 113 @ Site Entrance (right turns in and out, left turn in): A proposed three-legged intersection with stop control along the minor street approach, which provides site access to US Route 113. The site entrance would include exclusive right-turn lanes entering and exiting the site (Cases 4 and 5), and an exclusive left-turn lane entering the site for Case 5 only.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (US Route 113) Dual through lanes, with an exclusive right-turn lane entering the site development.

Southbound approach: (US Route 113) Dual through lanes, with an exclusive left-turn lane entering the site development (only analyzed in Case 5).

Westbound approach: (Site Entrance) Single lane approach (right-turn only to US Route 113).

North Old State Road @ Johnson Road (Sussex Road 207): A four-way intersection with two-way stop control for the minor street approaches.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (Old State Road) Single lane approach, no stop control.

Southbound approach: (Old State Road) Single lane approach, no stop control.

Eastbound approach: (Johnson Road) Single lane approach, stop controlled.

Westbound approach: (Johnson Road) Single lane approach, stop controlled.

US Route 113 @ U-Turn crossover north of Donovan Street: A three-legged intersection with two-way stop control for the minor street approach.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (US Route 113) Dual through lanes, no stop control.

Southbound approach: (US Route 113) Dual through lanes and an exclusive left-turn/U-turn lane, no stop control.

Westbound approach: (Private Driveway) Single lane approach, stop controlled.

US Route 113 @ Johnson Road/Fitzgeralds Road (Sussex Road 207): A four-legged intersection with an actuated, uncoordinated traffic signal. The signal phasing consists of protected/permissive phasing along US Route 113 and permissive phasing along each side street.

Type of control: Fully-actuated, uncoordinated traffic signal.

Northbound approach: (US Route 113) Dual through lane approach with exclusive left-turn and right-turn lanes.

Southbound approach: (US Route 113) Dual through lane approach with exclusive left-turn and right-turn lanes.

Eastbound approach: (Fitzgeralds Road) Single lane approach, shared left-turn and through lane, channelized right-turn lane.

Westbound approach: (Johnson Road) Shared left-turn and through lane, exclusive and channelized right-turn lane.

US Route 113 @ Seabury Avenue (Sussex Road 213): A large four-legged intersection with two-way stop control for the minor street (Seabury Avenue) approach.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (US Route 113) Dual through lane approach with an exclusive and channelized right-turn lane.

Southbound approach: (US Route 113) Dual through lane approach with exclusive and channelized left-turn and right-turn lanes.

Eastbound approach: (Seabury Avenue) Single lane approach, channelized to allow for right-turns only to US Route 113.

Westbound approach: (Seabury Avenue) Single lane approach with a channelized right-turn lane; only left-turns and right-turns permitted to US Route 113.

New Street @ Cherry Street: A three-legged intersection with two-way stop control for the minor street (New Street) approach.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (Cherry Street) Single lane approach, no stop control.

Southbound approach: (Cherry Street) Single lane approach, no stop control.

Westbound approach: (New Street) Single lane approach, stop controlled.

New Street @ Elm Street: A four-legged intersection with stop control for all approaches.

Type of control: Unsignalized all-way stop controlled intersection.

Eastbound approach: (New Street) Single lane approach, stop controlled.

Westbound approach: (New Street) Single lane approach, stop controlled.

Northbound approach: (Elm Street) Single lane approach, stop controlled.

Southbound approach: (Elm Street) Single lane approach, stop controlled.

New Street @ Pine Street/Wilbur Street: A four-legged intersection with stop control for all approaches.

Type of control: Unsignalized all-way stop controlled intersection.

Eastbound approach: (New Street) Single lane approach, stop controlled.

Westbound approach: (New Street) Single lane approach, stop controlled.

Northwestbound approach: (Wilbur Street) Single lane approach at a skewed angle, stop controlled.

Southbound approach: (Pine Street) Single lane approach, stop controlled.

New Street @ Pine Street/Wilbur Street/Site Entrance: A future scenario intersection, the unsignalized intersection of New Street with Pine Street and Wilbur Street would become a “five points” intersection with stop control for all approaches.

Type of control: Unsignalized all-way stop controlled intersection.

Eastbound approach: (New Street) Single lane approach, stop controlled.

Westbound approach: (New Street) Single lane approach, stop controlled.

Northwestbound approach: (Wilbur Street) Single lane approach at a skewed angle, stop controlled.

Northeastbound approach: (Site Entrance) Single lane approach at a skewed angle, stop controlled.

Southbound approach: (Pine Street) Single lane approach, stop controlled.

Note: Although there are no expected level of service issues at this intersection, it is not desirable to add traffic to Pine Street, due to the five-way intersection of Pine Street/Wilbur Street/New Street. Since the TIS was submitted, the developer has suggested creating a new access point off of Wilbur Street, between Pine Street and Walnut Street, rather than the five-way intersection analyzed in the TIS. We agree with this proposed access modification. Due to the low traffic volumes and favorable LOS in the five-way intersection analysis, no further analysis of the updated access configuration is required.

Seabury Avenue @ Cherry Street: A three-legged intersection with two-way stop control for the minor street (Cherry Street) approach.

Type of control: Unsignalized two-way stop controlled intersection.

Eastbound approach: (Seabury Avenue) Single lane approach, no stop control.

Westbound approach: (Seabury Avenue) Single lane approach, no stop control.

Northbound approach: (Cherry Street) Single lane approach, stop controlled.

Seabury Avenue @ Elm Street: A four-legged intersection with two-way stop control for the minor street (Elm Street) approach. The north leg of the intersection is one-way outbound only.

Type of control: Unsignalized two-way stop controlled intersection.

Eastbound approach: (Seabury Avenue) Single lane approach, no stop control.

Westbound approach: (Seabury Avenue) Single lane approach, no stop control.

Northbound approach: (Elm Street) Single lane approach, stop controlled.

Southbound approach: (Gagne Lane) One-way outbound only.

Seabury Avenue @ Pine Street: A three-legged intersection with two-way stop control for the minor street (Pine Street) approach.

Type of control: Unsignalized two-way stop controlled intersection.

Eastbound approach: (Seabury Avenue) Single lane approach, no stop control.

Westbound approach: (Seabury Avenue) Single lane approach, no stop control.

Northbound approach: (Pine Street) Single lane approach, stop controlled.

Walnut Street @ Clarke Avenue/Seabury Avenue: A five-points intersection with stop control for the minor streets (Seabury Avenue and Clarke Avenue) approaches.

Type of control: Unsignalized two-way stop controlled five-points intersection

Northbound approach: (Walnut Street) Single lane approach, no stop control.

Northeastbound approach: (Seabury Avenue) Single lane approach at a skewed angle, stop controlled.

Southbound approach: (Walnut Street) Single lane approach, no stop control.

South-eastbound approach: (Clarke Avenue) Single lane approach at a skewed angle, stop controlled.

Westbound approach: (Clarke Avenue) Single lane approach, stop controlled.

Walnut Street @ Wilbur Street: A three-legged intersection with two-way stop control for the minor street (Wilbur Street) approach.

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (Walnut Street) Single lane approach, no stop control.

Southbound approach: (Walnut Street) Single lane approach, no stop control.

Eastbound approach: (Wilbur Street) Single lane approach, stop controlled.

Walnut Street @ McCoy Street (Sussex Road 211):

Type of control: Unsignalized two-way stop controlled intersection.

Northbound approach: (Walnut Street) Single lane approach, no stop control.

Southbound approach: (Walnut Street) Single lane approach, no stop control.

Westbound approach: (McCoy Street) Single lane approach, stop controlled.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service:

The traffic impact study indicated that the Delaware Transit Corporation (DTC) was contacted in writing but no response was received. The report stated that only one transit route serviced the Milford area. A call to David Dooley at DTC found that actually two routes service Milford, DTC Route 210 and DTC Route 303. Route 210 operates between Georgetown, Milford, and Milton. Route 303 operates between Milford, Ellendale, and Georgetown. Currently both bus routes are serviced by a single bus stop within the study area on Walnut Street by Mispillion Apartments.

Planned transit service:

DTC has no future plans for expansion of their services in the Milford area. There are plans to extend Route 303 from Georgetown to Millsboro, but Mr. Dooley said there was no set time line for this expansion to take place. The traffic impact study report mentioned that the Simpson Property site along Walnut Street (opposite the Mispillion Apartments stop) would be a candidate for a new stop location.

Existing bicycle and pedestrian facilities:

Currently the roads in the vicinity of the Simpson Property are listed as either average or above average in their accommodation of bicycle traffic along the roadway. US Route 113 (DuPont Boulevard) is listed as being average for bicycling, but volumes in excess of 10,000 vehicles per day make this route less favorable to bicyclists. The Southern Delaware Heritage Trail passes through downtown Milford and its route comes within two blocks of the Simpson Property. This information was obtained from the Kent County and Sussex County Bicycle Touring Map.

Planned bicycle and pedestrian facilities:

According to the letter dated September 29, 2004, from Anthony Aglio, II, the developer should provide a five-foot shoulder along Walnut Street (RD 213) and add a five-foot bicycle lane through the site entrances and along property frontage. It was also recommended that five-foot sidewalks with an appropriate buffer be constructed for Walnut Street along the site frontage and that sidewalks be constructed to connect with existing facilities along Cherry, Elm, and Pine Streets. The Simpson Property should also contain an internal sidewalk network.

Previous Comments

Per DeIDOT's scoping letter, dated 05/27/04, an evaluation of the roadway facilities was to be completed for North Old State Road, between Seabury Avenue and Johnson Road, to determine conformance with applicable DeIDOT, AASHTO and MUTCD standards. This evaluation was not included in the study. Our brief review of these issues revealed substandard guardrail at two locations on North Old State Street, between the southern site entrance and Johnson Road.

Not all comments from DeIDOT's preliminary review of the Simpson Property TIS were addressed in a satisfactory manner, and some of the corrected figures submitted to DBF in the DeIDOT letter dated October 7, 2004, were not updated in the final TIS submission. The following details those items not satisfactorily updated or not updated at all.

1. Figures 50, 51, 52, and 53 should have been modified due to volume corrections and graphic errors. The final TIS graphics only have the changes marked in pencil. Formal changes should be made electronically to the figures.
2. The volumes shown in Figures 51, 52, 53, 58, 60, 61, 65, and 66 in the TIS differ from the corrected and approved volumes that were submitted by DeIDOT with the preliminary review letter.

All other comments from the letter were addressed in the TIS submitted.

US Route 113 Access

Three access options were examined on US Route 113:

- right turn out only,
- right turn in and right turn out, and
- right turn in, right turn out, and left turn in.

The right turn out only option resulted in LOS deficiencies at North Old State Street & Johnson Road and U.S. Route 113 & Seabury Avenue. Under the other two access options, the LOS deficiencies were eliminated at North Old State Street & Johnson Road, and significantly reduced at U.S. Route 113 & Seabury Avenue. The third option has the additional benefit of reducing site traffic on Seabury Avenue and the residential area between Seabury Avenue and the proposed development. Additionally, the City of Milford has noted their support for the third option. Therefore, we recommend that the U.S. Route 113 site access allow all movements except for the westbound site access left-turn.

Signalization of US Route 113 & Seabury Avenue

Signalization of this intersection may not be feasible due to the proximity to the nearby intersection on US Route 113 with Lakeview Avenue. Signalization may not become an issue, as the LOS deficiency is relatively minor (LOS E) and occurs in only one peak hour. However, should DeIDOT decide to signalize (and possibly reconfigure) the intersection in the future, this developer should be required to enter into a traffic signal agreement.

HCS Analysis Comments

General

1. Minor peak hour factor and heavy vehicle percentage value changes were made for several intersections and analysis conditions.

Walnut Street (Sussex Route 213) @ North Site Entrance (See Table 2)

2. No additional comments.

Walnut Street (Sussex Route 213) @ Mispillion Apartments/South Site Entrance (See Table 3)

3. Minor changes to volumes in the PM files for analysis conditions 3, 4, and 5.

US Route 113 @ Site Entrance (right turns in and out, left in) (See Table 4)

4. No additional comments.

North Old State Road @ Johnson Road (Sussex Route 207) (See Table 5)

5. No additional comments.

US Route 113 @ U-Turn crossover north of Donovan Street (See Table 6)

6. No additional comments.

US Route 113 @ Johnson Road/Fitzgeralds Road (Sussex Route 207) (See Table 7)

7. Different signal timings were used to achieve slightly improved delays and LOS results.

US Route 113 @ Seabury Avenue (Sussex Route 36A) (See Table 8)

8. The signalized analysis did not have any heavy vehicle values entered.
9. Minor modifications to the signal timings yielded better delays and LOS results.

New Street @ Cherry Street (See Table 9)

10. No additional comments.

New Street @ Elm Street (See Table 10)

11. No additional comments.

New Street @ Pine Street/Wilbur Street (See Table 11)

12. No additional comments.

New Street @ Pine Street/Wilbur Street/Site Entrance (See Table 12)

13. Highway Capacity Software is not currently capable of modeling "five way" intersections. For purposes of analysis, the westbound New Street approach was removed from the analysis because of the extremely low volumes along that approach, the Wilbur Street approach was considered westbound, and the new site entrance was considered northbound.

Seabury Avenue @ Cherry Street (See Table 13)

14. No additional comments.

Seabury Avenue @ Elm Street (See Table 14)

15. No additional comments.

Seabury Avenue @ Pine Street (See Table 15)

16. No additional comments.

Walnut Street @ Seabury Avenue/Clarke Avenue (See Table 16 & Table 17)

17. Highway Capacity Software is not currently capable of modeling “five way” intersections. For the purposes of analysis, this intersection was analyzed as two separate intersections to account for all approaches. Tables 16 and 17 represent the results of the analysis for this intersection.
18. The McCormick Taylor, Inc. analysis methodology for the “five-way” intersection analysis differed from that of the TIS, and utilized different traffic volumes to account for opposing traffic movements at the five-way intersection. This accounts for the slight deviations in the reported LOS and delays for the eastbound and westbound approaches.

Walnut Street @ Wilbur Street (See Table 18)

19. No additional comments.

Walnut Street @ McCoy Avenue (Sussex Route 211) (See Table 19)

20. No additional comments.

Table 2
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|--|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Walnut Street @ North Site Entrance | | | | |
| 2010 Post-Development (Conditions 3) | | | | |
| Northbound Walnut Street | A (7.5) | A (7.5) | A (7.5) | A (7.7) |
| Eastbound Site Access | A (9.9) | B (10.1) | A (9.9) | B (10.2) |
| 2010 Post-Development (Conditions 4 & 5) | | | | |
| Northbound Walnut Street | A (7.7) | A (7.7) | A (7.5) | A (7.7) |
| Eastbound Site Access | B (10.1) | B (10.2) | B (10.1) | B (10.2) |

¹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ² | LOS per TIS Analysis | | LOS per McCormick Taylor Review ³ | |
|--|----------------------|------------|--|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Walnut Street @ Mispillion Apartments & Site Entrance | | | | |
| 2004 Existing (Condition 1) | | | | |
| Southbound Walnut Street | A (7.4) | A (7.4) | A (7.4) | A (7.4) |
| Westbound Mispillion Apartments | A (9.0) | A (9.3) | A (9.0) | A (9.3) |
| 2010 Pre-Development (Condition 2) | | | | |
| Southbound Walnut Street | A (7.4) | A (7.4) | A (7.5) | A (7.4) |
| Westbound Mispillion Apartments | A (9.1) | A (9.3) | A (9.1) | A (9.3) |
| 2010 Post-Development (Condition 3) | | | | |
| Northbound Walnut Street | A (7.7) | A (7.8) | A (7.7) | A (7.7) |
| Southbound Walnut Street | A (7.5) | A (7.5) | A (7.5) | A (7.5) |
| Eastbound Site Access | B (13.2) | B (12.4) | B (13.1) | B (12.2) |
| Westbound Mispillion Apartments | B (10.5) | B (11.1) | B (10.5) | B (10.9) |
| 2010 Post-Development (Conditions 4 & 5) | | | | |
| Northbound Walnut Street | A (7.6) | A (7.6) | A (7.6) | A (7.6) |
| Southbound Walnut Street | A (7.4) | A (7.5) | A (7.5) | A (7.5) |
| Eastbound Site Access | B (12.0) | B (11.6) | B (11.9) | B (11.4) |
| Westbound Mispillion Apartments | A (9.9) | B (10.2) | A (10.0) | B (10.1) |

² For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

³ Minor changes to volumes in the PM files for analysis conditions 3, 4, and 5.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ⁴ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|--|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| US Route 113 @ Site Entrance | | | | |
| 2010 Post-Development (Condition 4) | | | | |
| Westbound Site Access | D (32.5) | C (17.7) | D (32.5) | C (17.7) |
| 2010 Post-Development (Condition 5) | | | | |
| Southbound US Route 113 | B (11.0) | C (17.2) | B (11.0) | C (17.2) |
| Westbound Site Access | D (32.5) | C (17.7) | D (32.5) | C (17.7) |

⁴ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 5
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ⁵ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|--|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| North Old State Road @ Johnson Road | | | | |
| 2004 Existing (Condition 1) | | | | |
| Northbound Old State Road | C (16.0) | B (14.2) | C (16.0) | B (14.2) |
| Southbound Old State Road | C (15.2) | B (14.1) | C (15.5) | B (14.1) |
| Eastbound Johnson Road | A (7.9) | A (7.8) | A (8.0) | A (7.8) |
| Westbound Johnson Road | A (7.9) | A (7.8) | A (7.8) | A (7.8) |
| 2010 Pre-Development (Condition 2) | | | | |
| Northbound Old State Road | C (16.6) | C (15.6) | C (16.7) | C (15.6) |
| Southbound Old State Road | C (16.4) | C (16.2) | C (16.7) | C (16.2) |
| Eastbound Johnson Road | A (8.0) | A (7.9) | A (8.0) | A (7.8) |
| Westbound Johnson Road | A (7.9) | A (7.9) | A (7.8) | A (7.9) |
| 2010 Post-Development (Condition 3) | | | | |
| Northbound Old State Road | C (21.6) | C (21.2) | C (21.4) | C (21.2) |
| Southbound Old State Road | E (35.1) | D (27.7) | E (37.3) | D (27.4) |
| Eastbound Johnson Road | A (8.2) | A (8.2) | A (8.3) | A (8.2) |
| Westbound Johnson Road | A (7.9) | A (7.9) | A (7.8) | A (7.9) |
| 2010 Post-Development (Conditions 4 & 5) | | | | |
| Northbound Old State Road | C (17.7) | C (16.6) | C (17.7) | C (16.6) |
| Southbound Old State Road | D (25.3) | C (20.2) | D (26.9) | C (20.2) |
| Eastbound Johnson Road | A (8.1) | A (8.1) | A (8.2) | A (8.0) |
| Westbound Johnson Road | A (7.9) | A (7.9) | A (7.8) | A (7.9) |

⁵ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ⁶ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|--|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| US Route 113 @ U-Turn crossover North of Donovan Street | | | | |
| 2004 Existing (Condition 1) | | | | |
| Northbound US Route 113 | A (9.9) | A (9.4) | A (9.9) | A (9.4) |
| Southbound US Route 113 | A (9.3) | A (9.7) | A (9.1) | A (9.7) |
| 2010 Pre-Development (Condition 2) & 2010 Post-Development (Condition 3) | | | | |
| Northbound US Route 113 | B (11.0) | B (10.2) | B (11.0) | B (10.3) |
| Southbound US Route 113 | B (10.1) | B (10.7) | A (9.8) | B (10.7) |
| 2010 Post-Development (Condition 4) | | | | |
| Northbound US Route 113 | B (11.4) | B (10.4) | B (11.3) | B (10.5) |
| Southbound US Route 113 | B (11.1) | C (17.2) | B (10.8) | C (19.4) |
| 2010 Post-Development (Condition 5) | | | | |
| Northbound US Route 113 | B (11.4) | B (10.4) | B (11.3) | B (10.5) |
| Southbound US Route 113 | B (10.2) | B (11.0) | A (10.0) | B (11.0) |

⁶ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 7
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Signalized Intersection ⁷ | LOS per TIS Analysis | | LOS per McCormick Taylor Review ⁸ | |
|--|----------------------|------------|--|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| US Route 113 @ Johnson & Fitzgerald Roads | | | | |
| 2004 Existing (Condition 1) | B (0.59) | B (0.65) | B (0.60) | B (0.61) |
| 2010 Pre-Development (Condition 2) | B (0.67) | B (0.69) | B (0.66) | B (0.65) |
| 2010 Post-Development (Condition 3) | C (0.77) | B (0.74) | B (0.75) | B (0.74) |
| 2010 Post-Development (Conditions 4 & 5) | B (0.71) | B (0.73) | B (0.71) | B (0.67) |

⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

⁸ Different signal timings were used to achieve slightly improved delays and LOS results.

Table 8
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ⁹ | LOS per TIS Analysis ¹⁰ | | LOS per McCormick Taylor Review ¹¹ | |
|--|------------------------------------|------------|---|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| US Route 113 @ Seabury Avenue | | | | |
| 2004 Existing (Condition 1) | | | | |
| Southbound US Route 113 | A (9.7) | B (10.1) | A (9.7) | B (10.1) |
| Eastbound Seabury Avenue | B (11.4) | B (11.5) | B (11.4) | B (11.5) |
| Westbound Seabury Avenue | B (14.7) | C (18.3) | B (14.7) | C (17.5) |
| 2010 Pre-Development (Condition 2) | | | | |
| Southbound US Route 113 | B (10.6) | B (11.7) | B (10.6) | B (11.7) |
| Eastbound Seabury Avenue | B (12.1) | B (12.5) | B (12.1) | B (12.5) |
| Westbound Seabury Avenue | C (19.6) | C (23.1) | C (19.6) | C (23.4) |
| 2010 Post-Development (Condition 3) | | | | |
| Southbound US Route 113 | B (12.3) | D (30.9) | B (12.3) | D (30.9) |
| Eastbound Seabury Avenue | B (12.1) | B (12.5) | B (12.1) | B (12.5) |
| Westbound Seabury Avenue | F (52.7) | F (205.8) | F (52.7) | F (205.8) |
| 2010 Post-Development (Condition 4) | | | | |
| Southbound US Route 113 | C (15.2) | C (15.4) | C (15.2) | B (14.7) |
| Eastbound Seabury Avenue | B (13.1) | C (15.1) | B (13.1) | C (15.1) |
| Westbound Seabury Avenue | E (35.4) | E (40.4) | E (35.4) | E (38.9) |
| 2010 Post-Development (Condition 5) | | | | |
| Southbound US Route 113 | B (14.3) | C (15.2) | B (14.3) | C (15.2) |
| Eastbound Seabury Avenue | B (13.3) | C (15.2) | B (13.3) | C (15.2) |
| Westbound Seabury Avenue | D (32.4) | E (39.8) | D (32.4) | E (40.4) |
| Signalized Intersection⁹ | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2010 Pre-Development (Condition 3) | C (0.86) | C (0.95) | B (0.75) | B (0.72) |
| 2010 Post-Development (Condition 4) | C (0.89) | C (0.95) | B (0.69) | A (0.58) |
| 2010 Post-Development (Condition 5) | C (0.89) | C (0.95) | B (0.57) | A (0.64) |

⁹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹⁰ The signalized analysis did not have any heavy vehicle values entered.

¹¹ Minor modifications to the signal timings yielded better delays and LOS results.

Table 9
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹² | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|--|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| New Street @ Cherry Street | | | | |
| 2004 Existing (Condition 1) & 2010 Pre-Development (Condition 2) | | | | |
| Westbound New Street | A (8.5) | A (8.4) | A (8.5) | A (8.4) |
| Southbound Cherry Street | A (7.2) | A (7.2) | A (7.3) | A (7.2) |
| 2010 Post-Development (Condition 3) | | | | |
| Westbound New Street | B (10.3) | A (9.3) | B (10.2) | A (9.4) |
| Southbound Cherry Street | A (7.9) | A (7.5) | A (7.9) | A (7.6) |
| 2010 Post-Development (Condition 4) | | | | |
| Westbound New Street | A (8.7) | A (8.5) | A (8.6) | A (8.5) |
| Southbound Cherry Street | A (7.3) | A (7.3) | A (7.3) | A (7.3) |
| 2010 Post-Development (Condition 5) | | | | |
| Westbound New Street | A (8.7) | A (8.5) | A (8.6) | A (8.5) |
| Southbound Cherry Street | A (7.3) | A (7.3) | A (7.3) | A (7.3) |

¹² For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 10
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹³ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|--|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| New Street @ Elm Street | | | | |
| 2004 Existing (Condition 1) & 2010 Pre-Development (Condition 2) | | | | |
| Eastbound New Street | A (7.1) | A (7.1) | A (7.1) | A (7.1) |
| Westbound New Street | A (7.4) | A (6.6) | A (7.4) | A (6.6) |
| Northbound Elm Street | A (6.8) | A (7.0) | A (6.9) | A (7.0) |
| Southbound Elm Street | A (7.0) | A (7.1) | A (7.0) | A (7.1) |
| 2010 Post-Development (Condition 3) | | | | |
| Eastbound New Street | A (7.1) | A (7.1) | A (7.5) | A (7.5) |
| Westbound New Street | A (7.4) | A (6.6) | A (7.7) | A (7.0) |
| Northbound Elm Street | A (6.8) | A (7.0) | A (7.7) | A (7.4) |
| Southbound Elm Street | A (7.0) | A (7.1) | A (7.5) | A (7.9) |
| 2010 Post-Development (Condition 4) | | | | |
| Eastbound New Street | A (7.5) | A (7.5) | A (7.3) | A (7.2) |
| Westbound New Street | A (7.7) | A (6.9) | A (7.5) | A (6.7) |
| Northbound Elm Street | A (7.7) | A (7.4) | A (7.2) | A (7.1) |
| Southbound Elm Street | A (7.5) | A (8.0) | A (7.3) | A (7.4) |
| 2010 Post-Development (Condition 5) | | | | |
| Eastbound New Street | A (7.3) | A (7.2) | A (7.3) | A (7.2) |
| Westbound New Street | A (7.5) | A (6.7) | A (7.4) | A (6.7) |
| Northbound Elm Street | A (7.2) | A (7.2) | A (7.2) | A (7.1) |
| Southbound Elm Street | A (7.3) | A (7.5) | A (7.2) | A (7.4) |

¹³ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 11
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹⁴ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|---|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| New Street @ Pine Street & Wilbur Street | | | | |
| 2004 Existing (Condition 1) | | | | |
| Eastbound New Street | A (7.0) | A (7.2) | A (7.0) | A (6.9) |
| Westbound New Street | A (6.9) | A (7.0) | A (6.8) | A (7.0) |
| Northbound Wilbur Street | A (7.5) | A (7.5) | A (7.5) | A (7.5) |
| Southbound Pine Street | A (7.4) | A (7.5) | A (7.4) | A (7.5) |
| 2010 Pre-Development (Condition 2) | | | | |
| Eastbound New Street | A (7.0) | A (7.2) | A (7.0) | A (6.8) |
| Westbound New Street | A (6.9) | A (7.0) | A (6.9) | A (7.0) |
| Northbound Wilbur Street | A (7.6) | A (7.4) | A (7.5) | A (7.4) |
| Southbound Pine Street | A (7.4) | A (7.5) | A (7.4) | A (7.5) |
| 2010 Post-Development (Condition 3, 4 & 5) | | | | |
| Eastbound New Street | A (7.0) | A (7.2) | A (7.0) | A (6.8) |
| Westbound New Street | A (6.9) | A (7.0) | A (6.9) | A (7.0) |
| Northbound Wilbur Street | A (7.6) | A (7.4) | A (7.5) | A (7.4) |
| Southbound Pine Street | A (7.4) | A (7.5) | A (7.4) | A (7.5) |

¹⁴ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 12
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹⁵ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|--|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| New Street @ Pine Street & Wilbur Street & Site Entrance¹⁶ | | | | |
| 2010 Post-Development (Condition 3) | | | | |
| Eastbound New Street | A (7.4) | A (7.7) | A (7.4) | A (7.4) |
| Westbound Wilbur Street | A (7.1) | A (7.0) | A (7.1) | A (7.1) |
| Northbound Site Entrance | A (7.5) | A (7.4) | A (7.5) | A (7.4) |
| Southbound Pine Street | A (7.8) | A (8.0) | A (7.8) | A (8.1) |
| 2010 Post-Development (Condition 4) | | | | |
| Eastbound New Street | A (7.3) | A (7.7) | A (7.3) | A (7.3) |
| Westbound Wilbur Street | A (7.0) | A (6.9) | A (7.0) | A (6.9) |
| Northbound Site Entrance | A (7.4) | A (7.3) | A (7.4) | A (7.3) |
| Southbound Pine Street | A (7.8) | A (7.9) | A (7.7) | A (7.9) |
| 2010 Post-Development (Condition 5) | | | | |
| Eastbound New Street | A (7.3) | A (7.7) | A (7.3) | A (7.3) |
| Westbound Wilbur Street | A (7.0) | A (6.9) | A (7.0) | A (6.9) |
| Northbound Site Entrance | A (7.4) | A (7.3) | A (7.3) | A (7.3) |
| Southbound Pine Street | A (7.7) | A (7.9) | A (7.7) | A (7.9) |

¹⁵ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹⁶ Highway Capacity Software is not currently capable of modeling "five way" intersections. For purposes of analysis, the westbound New Street approach was removed from the analysis because of the extremely low volumes along that approach, the Wilbur Street approach was considered westbound, and the new site entrance was considered northbound.

Table 13
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹⁷ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|---|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Seabury Avenue @ Cherry Street | | | | |
| 2004 Existing (Condition 1) | | | | |
| Westbound Seabury Avenue | A (7.5) | A (7.5) | A (7.6) | A (7.6) |
| Northbound Cherry Street | A (9.9) | A (9.9) | A (9.9) | A (9.9) |
| 2010 Pre-Development (Condition 2) | | | | |
| Westbound Seabury Avenue | A (7.5) | A (7.6) | A (7.6) | A (7.6) |
| Northbound Cherry Street | A (9.9) | B (10.1) | A (9.9) | B (10.1) |
| 2010 Post-Development (Condition 3) | | | | |
| Westbound Seabury Avenue | A (7.8) | A (8.8) | A (8.0) | A (8.8) |
| Northbound Cherry Street | C (22.3) | C (19.6) | C (24.0) | C (19.6) |
| 2010 Post-Development (Condition 4) | | | | |
| Westbound Seabury Avenue | A (7.6) | A (7.8) | A (7.7) | A (7.8) |
| Northbound Cherry Street | B (10.7) | B (10.9) | B (10.7) | B (10.9) |
| 2010 Post-Development (Condition 5) | | | | |
| Westbound Seabury Avenue | A (7.5) | A (7.8) | A (7.6) | A (7.8) |
| Northbound Cherry Street | B (10.5) | B (10.8) | B (10.5) | B (10.8) |

¹⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 14
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹⁸ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|---|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Seabury Avenue @ Elm Street | | | | |
| 2004 Existing (Condition 1) | | | | |
| Eastbound Seabury Avenue | A (7.4) | A (7.4) | A (7.5) | A (7.4) |
| Westbound Seabury Avenue | A (7.8) | A (7.5) | A (7.6) | A (7.5) |
| Northbound Elm Street | A (9.4) | A (9.6) | A (9.4) | A (9.9) |
| 2010 Pre-Development (Condition 2) | | | | |
| Eastbound Seabury Avenue | A (7.4) | A (7.4) | A (7.5) | A (7.5) |
| Westbound Seabury Avenue | A (7.8) | A (7.6) | A (7.6) | A (7.6) |
| Northbound Elm Street | A (9.5) | B (10.2) | A (9.5) | B (10.2) |
| 2010 Post-Development (Condition 3) | | | | |
| Eastbound Seabury Avenue | A (7.5) | A (7.5) | A (7.6) | A (7.5) |
| Westbound Seabury Avenue | A (8.0) | A (8.0) | A (7.8) | A (8.0) |
| Northbound Elm Street | B (11.9) | B (12.3) | B (11.9) | B (12.3) |
| 2010 Post-Development (Condition 4) | | | | |
| Eastbound Seabury Avenue | A (7.5) | A (7.5) | A (7.6) | A (7.5) |
| Westbound Seabury Avenue | A (8.0) | A (7.7) | A (7.7) | A (7.8) |
| Northbound Elm Street | B (10.2) | B (10.7) | B (10.2) | B (10.7) |
| 2010 Post-Development (Condition 5) | | | | |
| Eastbound Seabury Avenue | A (7.5) | A (7.5) | A (7.6) | A (7.5) |
| Westbound Seabury Avenue | A (7.9) | A (7.7) | A (7.7) | A (7.8) |
| Northbound Elm Street | B (10.1) | B (10.7) | B (10.1) | B (10.7) |

¹⁸ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 15
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ¹⁹ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|---|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Seabury Avenue @ Pine Street | | | | |
| 2004 Existing (Condition 1) | | | | |
| Westbound Seabury Avenue | A (7.5) | A (7.5) | A (7.5) | A (7.6) |
| Northbound Pine Street | B (10.7) | B (10.0) | B (10.7) | B (10.0) |
| 2010 Pre-Development (Condition 2) | | | | |
| Westbound Seabury Avenue | A (7.5) | A (7.6) | A (7.5) | A (7.6) |
| Northbound Pine Street | B (10.6) | B (10.1) | B (10.6) | B (10.1) |
| 2010 Post-Development (Condition 3) | | | | |
| Westbound Seabury Avenue | A (7.6) | A (7.7) | A (7.6) | A (7.7) |
| Northbound Pine Street | B (11.5) | B (11.0) | B (11.5) | B (11.0) |
| 2010 Post-Development (Condition 4) | | | | |
| Westbound Seabury Avenue | A (7.6) | A (7.7) | A (7.6) | A (7.7) |
| Northbound Pine Street | B (11.2) | B (10.8) | B (11.2) | B (10.8) |
| 2010 Post-Development (Condition 5) | | | | |
| Westbound Seabury Avenue | A (7.6) | A (7.7) | A (7.6) | A (7.7) |
| Northbound Pine Street | B (11.1) | B (10.7) | B (11.2) | B (10.7) |

¹⁹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 16
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ²⁰ | LOS per TIS Analysis | | LOS per McCormick Taylor Review ²¹ | |
|--|----------------------|------------|---|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Walnut Street @ Seabury Avenue & Clarke Avenue²² | | | | |
| 2004 Existing (Condition 1) | | | | |
| Northbound Walnut Street | A (7.8) | A (8.0) | A (7.8) | A (8.0) |
| Southbound Walnut Street | A (7.6) | A (7.3) | A (7.5) | A (7.5) |
| Eastbound Seabury Avenue | B (11.8) | B (12.5) | B (12.8) | C (15.5) |
| Westbound Clarke Avenue | A (9.6) | B (10.6) | B (10.2) | B (11.9) |
| 2010 Pre-Development (Condition 2) | | | | |
| Northbound Walnut Street | A (8.0) | A (8.1) | A (8.0) | A (8.2) |
| Southbound Walnut Street | A (7.7) | A (7.6) | A (7.6) | A (7.6) |
| Eastbound Seabury Avenue | B (13.3) | B (14.9) | C (15.1) | C (17.0) |
| Westbound Clarke Avenue | A (10.0) | B (11.4) | B (10.9) | B (12.8) |
| 2010 Post-Development (Condition 3) | | | | |
| Northbound Walnut Street | A (8.2) | A (8.5) | A (8.4) | A (8.6) |
| Southbound Walnut Street | A (8.0) | A (7.7) | A (7.7) | A (7.6) |
| Eastbound Seabury Avenue | C (20.0) | C (19.3) | D (29.0) | D (25.3) |
| Westbound Clarke Avenue | B (11.1) | B (12.5) | B (12.8) | B (14.7) |
| 2010 Post-Development (Conditions 4 & 5) | | | | |
| Northbound Walnut Street | A (8.2) | A (8.5) | A (8.4) | A (8.6) |
| Southbound Walnut Street | A (8.0) | A (7.7) | A (7.7) | A (7.6) |
| Eastbound Seabury Avenue | C (20.1) | C (19.3) | D (29.0) | D (25.2) |
| Westbound Clarke Avenue | B (11.1) | B (12.5) | B (12.8) | B (14.7) |

²⁰ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

²¹ The McCormick Taylor, Inc. analysis methodology for the "five-way" intersection analysis differed from that of the TIS, and utilized different volumes to account for the opposing movements. This accounts for the slight deviations in the reported LOS and delays for the eastbound and westbound approaches.

²² Highway Capacity Software is not currently capable of modeling "five way" intersection. For the purposes of analysis, this intersection was analyzed as two separate intersections to account for all approaches. Tables 16 and 17 represent the results of the analysis for this intersection.

Table 17
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ²³ | LOS per TIS Analysis | | LOS per McCormick Taylor Review ²⁴ | |
|---|----------------------|------------|---|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Walnut Street @ Clarke Avenue²⁵ | | | | |
| 2004 Existing (Condition 1) | | | | |
| Northbound Walnut Street | A (8.1) | A (7.9) | A (7.8) | A (7.9) |
| Southbound Walnut Street | A (7.5) | A (7.6) | A (7.6) | A (7.6) |
| Eastbound Clarke Avenue | A (9.9) | B (10.8) | A (9.4) | B (10.8) |
| Westbound Clarke Avenue | B (10.2) | B (11.7) | B (10.6) | B (12.5) |
| 2010 Pre-Development (Condition 2) | | | | |
| Northbound Walnut Street | A (8.2) | A (8.0) | A (7.9) | A (8.0) |
| Southbound Walnut Street | A (7.6) | A (7.7) | A (7.7) | A (7.7) |
| Eastbound Clarke Avenue | B (10.4) | B (11.4) | A (9.6) | B (11.0) |
| Westbound Clarke Avenue | B (11.1) | B (13.0) | B (11.4) | B (13.6) |
| 2010 Post-Development (Condition 3) | | | | |
| Northbound Walnut Street | A (8.6) | A (8.3) | A (8.2) | A (8.3) |
| Southbound Walnut Street | A (7.9) | A (7.8) | A (8.0) | A (7.8) |
| Eastbound Clarke Avenue | B (11.3) | B (12.6) | B (10.2) | B (12.0) |
| Westbound Clarke Avenue | B (13.6) | C (15.5) | B (14.0) | C (16.1) |
| 2010 Post-Development (Conditions 4 & 5) | | | | |
| Northbound Walnut Street | A (8.6) | A (8.3) | A (8.2) | A (8.3) |
| Southbound Walnut Street | A (7.9) | A (7.8) | A (8.0) | A (7.9) |
| Eastbound Clarke Avenue | B (11.3) | B (12.6) | B (10.2) | B (12.1) |
| Westbound Clarke Avenue | B (13.6) | C (15.5) | B (14.0) | C (16.5) |

²³ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

²⁴ The McCormick Taylor, Inc. analysis methodology for the "five-way" intersection analysis differed from that of the TIS, and utilized different volumes to account for the opposing movements. This accounts for the slight deviations in the reported LOS and delays for the eastbound and westbound approaches.

²⁵ Highway Capacity Software is not currently capable of modeling "five way" intersection. For the purposes of analysis, this intersection was analyzed as two separate intersections to account for all approaches. Tables 16 and 17 represent the results of the analysis for this intersection.

Table 18
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ²⁶ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|---|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Walnut Street @ Wilbur Street | | | | |
| 2004 Existing (Condition 1) | | | | |
| Northbound Walnut Street | A (7.7) | A (7.9) | A (7.7) | A (7.9) |
| Eastbound Wilbur Street | A (9.2) | B (10.1) | A (9.2) | B (10.1) |
| 2010 Pre-Development (Condition 2) | | | | |
| Northbound Walnut Street | A (7.8) | A (8.1) | A (7.7) | A (8.1) |
| Eastbound Wilbur Street | A (9.3) | B (10.6) | A (9.3) | B (10.6) |
| 2010 Post-Development (Conditions 3, 4 & 5) | | | | |
| Northbound Walnut Street | A (8.0) | A (8.2) | A (8.0) | A (8.3) |
| Eastbound Wilbur Street | A (9.8) | B (11.2) | A (9.8) | B (11.2) |

²⁶ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 19
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Simpson Property
Report dated November 2004
Prepared by Davis, Bowen & Friedel, Inc.

| Unsignalized Intersection ²⁷ | LOS per TIS Analysis | | LOS per McCormick Taylor Review | |
|---|----------------------|------------|---------------------------------|------------|
| | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| Walnut Street @ McCoy Street | | | | |
| 2004 Existing (Condition 1) | | | | |
| Southbound Walnut Street | A (7.7) | A (7.8) | A (7.7) | A (7.8) |
| Westbound McCoy Street | B (10.0) | B (10.7) | B (10.0) | B (10.8) |
| 2010 Pre-Development (Condition 2) | | | | |
| Southbound Walnut Street | A (7.8) | A (7.9) | A (7.8) | A (7.9) |
| Westbound McCoy Street | B (10.7) | B (11.1) | B (10.7) | B (11.2) |
| 2010 Post-Development (Conditions 3, 4 & 5) | | | | |
| Southbound Walnut Street | A (8.1) | A (8.1) | A (8.1) | A (8.0) |
| Westbound McCoy Street | B (12.3) | B (11.8) | B (12.2) | B (11.9) |

²⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.